

MAY 21 1993



**Professional Service Industries, Inc.**  
Willis Engineering Division

May 18, 1993

Vermont Agency of Natural Resources  
Hazardous Materials Management Division  
West Office Building  
103 South Main Street  
Waterbury, Vermont 05671-0404

Attn: Mr. Charles B. Schwer, Supervisor  
Sites Management Section

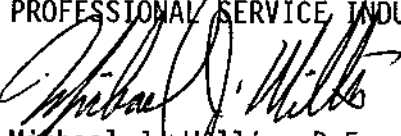
Re: Exposure and Remediation Report  
SMS Site #93-1364  
Former Cabot Building  
Woodstock, Vermont  
PSI Report # 093-24032-5

Dear Mr. Schwer,

In accordance with the approved Work Plan prepared by Professional Service Industries, Inc. dated March 26, 1993 (PSI report #093-24032-4), this report will serve to document the results of the additional investigation. An assessment of the exposure and need for monitoring and remediation are presented for your review and comment.

If you should have any questions or comments, please do not hesitate to contact our office.

Respectfully Submitted,  
PROFESSIONAL SERVICE INDUSTRIES, INC.



Michael J. Willis, P.E.  
Northeast District Manager

David A. Preston, P.E.  
Technical Reviewer

MJW/ttm

cc: Robin Willey, Vermont National Bank  
Peter Van Oot, Downs, Rachlin and Martin

EXPOSURE AND REMEDIATION REPORT

Former Cabot Building  
Route 4  
Woodstock, Vermont

Prepared by  
Professional Service Industries, Inc.

for

Vermont National Bank  
2 The Green  
Woodstock, Vermont 05091

PSI File # 093-24032  
May 18, 1993



## TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
Site Location .....	1
Previous Reports .....	1
Purpose and Scope of Investigation.....	1
Field Screening/Receptor Identification .....	1
Assessment of Degree and Extent of Contamination .....	2
Exposure Assessment .....	3
Remediation Assessment.....	4
Appendices	
Results of Groundwater Monitoring	
Results of Soil Analysis	
Results of Field Screening	
Results of Screening Building Interior	
Field Calibration Report	
Sampling Location Plan	
Analytical Laboratory Results	
U.S.G.S. Location Map	
Sketch of Potential Receptors	
Monitoring Well Installation Logs	
Site Plan and Ledge Contour Plan	
Site Sections	

## Site Location

The subject site is located on Route 4 in the Town of Woodstock, outside of the Village approximately 200 hundred feet west of the Woodstock Village limit. It is located in a residential/commercial area (as shown on the attached **USGS photocopy**). A Site Plan with topographic features and the location of the 500 gallon heating oil underground storage tank (UST) and building is also enclosed.

## Previous Reports

Petroleum contamination of soil was confirmed at the site and was presented in PSI's Tank Closure Report (No. 093-24032-2 dated February 8, 1993) and Addendum (No. 093-24032-3 dated February 15, 1993). A summary of the tank removal and previous reports has been presented in the Work Plan (dated March 26, 1993) for this effort.

## Purpose and Scope of Investigation

This effort addresses the concerns noted in the letter, dated March 8, 1993 from the Sites Management Section (SMS) of the Hazardous Materials Management Division of the State of Vermont Agency of Natural Resources to Ms. Robin Willey. The general work items which have been performed to address these concerns are outlined below:

- I. Determine the degree and extent of soil and groundwater contamination.
- II. Field screen sensitive receptors with potential to be adversely affected by the observed contamination.
- III. Determine the need to develop a long term monitoring and/or remedial treatment plan based on information obtained in Items I and II.

## Field Screening/Receptor Identification

PSI has identified and performed on April 16, 1993 field screening of on-site and off-site receptors in the area downslope of the UST removal site. This area has been designated as the Design Management Zone for this investigation and assessment of the potential for remediation.

Four groundwater monitoring wells were installed and soils were field screened with a Photonization Detector (PID) on April 16, 1993. The results of this effort are documented on the enclosed Results of Field Screening report and Field Well Installation Diagrams.

Field screening of sensitive receptors such as the building interior, floor drains and foundation drains, stormwater sewers, and sanitary sewer lines revealed no detectable levels of Volatile Organic Compound (VOC) vapors. Ms. Robin Willey of the Vermont National Bank has reported that during the installation of interior supply lines in the boiler room from the replacement tank, an unidentified quantity of oil was spilled on the concrete floor adjacent to the boiler unit. The odor was noticeable, but was not detected by PID readings in the boiler room or any other room of the building. PID screening of storm sewers, sanitary sewers, floor drains, etc. revealed no detection of VOC vapors.

The field screening of soils from borings during the installation of monitoring wells MW1, MW2, and MW3 revealed no readings of volatile organic vapors. Monitoring of soils during the installation of monitoring well MW4 revealed VOC readings ranging from 19 ppm at the 4 foot depth to 39 ppm at the 8 foot depth. A soil sample was retrieved from MW4 at approximately the 8 foot depth, and the analytical results revealed a TPH value of 40 ppm of No. 2 diesel fuel and a total BTEX concentration of 5.3 mg/kg (see attached report of laboratory analysis for TPH and BTEX results).

The monitoring wells were developed and a topographic survey was performed on April 19, 1993 (see Field Well Installation Diagrams for well development data). Groundwater samples from all four monitoring wells were obtained on April 22, 1993.

The analytical results of groundwater samples from wells MW1, MW2 and MW3 revealed results below detectable limits for BTEX concentrations. Laboratory analysis of groundwater from well MW4 revealed BTEX concentrations below the Maximum Contaminant Levels (MCL) established in the July 7, 1991 National Drinking Water Regulations 40 CFR Part 141 Section 141.61 by the U.S. Environmental Protection Agency. The September 29, 1988 Vermont Groundwater Protection Rule and Strategy Chapter 12 Section 12-702 presents a list of Enforcement Standards and Preventive Action Limits in Table 1 Primary Ground Water Quality Standards for various groundwater components. The BTEX analytical results were below the Enforcement Standard Limits. The results were also below the Preventive Action Limits established in Chapter 12, with the exception of benzene.

#### Assessment of Degree and Extent of Contamination

The previous investigations identified locations of old gasoline underground storage tank(s) in front of the building which were reportedly removed 40 years ago. The laboratory performed a "fingerprint analysis" of the soil sample obtained from the boring for monitoring well MW4 to identify the contaminant as gasoline or fuel oil. The PSI laboratory report #06-385-33095-0002-I page 3 of 3 dated April 26, 1993 presents results of TPH analysis for diesel fuel at 40 ppm and for gasoline at below detectable limits (BDL). Smaller concentrations of heavier TPH compounds were also detected in the soil but were not quantified.

Background groundwater conditions were established upslope from the UST site at monitoring well MW1, with results below detectable limits for TPH. This suggests that the source of this contamination found in boring B2 and monitoring well MW4 was the 500 gallon heating oil tank which was removed on January 26, 1993.

The degree of contamination is in the form of residual and dissolved product in the soils and groundwater in the immediate area of the tank. The investigation efforts have not revealed evidence of any contamination in the form of free product. The quantity of product spillage from the 500 gallon heating oil tank was likely limited and associated with unidentified problems with the fill/vent piping on the tank.

The extent of residual product in soils is estimated to be contained in approximately 70 cubic yards of soil remaining in the area of the tank location (no soils have yet been transported off-site). The extent of groundwater contamination by dissolved product is estimated to be in the area downslope of the tank location migrating in a southeasterly direction towards the Ottaquechee River.

These assumptions are based on analysis of the bedrock conditions established from field investigations, and the presumed direction of groundwater flow evidenced by the analytical results of groundwater samples in comparison with the locations of the four monitoring wells. A Site Plan, Ledge Contour Plan and Subsurface Sections are attached. These documents were used to analyze the extent of contamination and potential route of groundwater migration.

#### Exposure Assessment

At the present time, PSI does not anticipate that additional subsurface data will be required beyond the data base developed from previous investigations and from the tasks performed in this effort. An exposure assessment evaluating a possible southeasterly groundwater migration route is herein presented. This exposure assessment has been used to evaluate the need for remediation.

In regards to exceeding the Preventive Action Limit for benzene outside of the Design Management Zone, PSI has reviewed the site conditions in accordance with Section 12-708 (1civ) of Chapter 12 Groundwater Protection Rule and Strategy. A response is not warranted due to the low probability that the Enforcement Standard Limit will be exceeded in consideration of the limited amount of product spillage assumed at the fill pipe, low concentrations of benzene in the groundwater sample from MW4, natural degradation, and dilution of the dissolved petroleum in the groundwater.

The southeasterly migration of groundwater contamination does not pose a great potential for impact to human health or the environment due to the limited amount of product spillage and that no buildings or potable water supplies lie in this direction. However, the Woodstock Aqueduct Company has a water main in the Route 4 right-of-way, and should be notified of this potential contaminant to their water distribution system. The Ottauquechee River is located immediately South of Route 4.

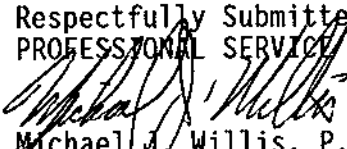
#### Remediation Assessment

The remediation of soil contamination should consist of the removal of the soils in the immediate area of the tank excavation. The results of analytical analysis of these soils has revealed TPH levels ranging from 58 ppm to 25,250 ppm. In accordance with the Vermont Agency of Natural Resources Interim Soil Guideline Levels and Treatment Options, soils in the range greater than 400 ppm are characterized as requiring handling and treatment as a petroleum contaminated waste, while those in the lower range are characterized as requiring on-site treatment. However, due to the site constraints (limited available area for on-site treatment of soils) and the limited quantity of contaminated soils, all of these soils should be considered to be handled as a petroleum contaminated material and hauled off-site for possible thermal treatment.

The installation of an additional monitoring well was considered to monitor the groundwater downslope of well MW4. However, there is no readily available space for a new monitor well South of MW4. Route 4 and the steep embankment to the Ottauquechee River do not provide an easily accessible location.

The need for the development of a long term monitoring and remedial treatment plan for the site does not appear to be warranted at this time, based on the information obtained from implementation of the approved Work Plan. A short term monitoring plan is recommended and consists of (1.) removal of the contaminated soils in the area of the tank excavation to assess the affect on groundwater conditions, and (2.) sampling groundwater from monitoring well MW #4 on a quarterly basis for a period of one year. Groundwater samples will be analyzed for BTEX concentrations using EPA Method 602.

Respectfully Submitted,  
PROFESSIONAL SERVICE INDUSTRIES, INC.

  
Michael J. Willis, P.E.  
Northeast District Manager

David A. Preston, P.E.  
Technical Reviewer



**Professional Service Industries, Inc.**  
Willis Engineering Division

TESTED FOR:

Vermont National Bank  
Woodstock, Vermont 05091

PROJECT:

Former Cabot Building  
Woodstock, Vermont

DATE:

May 18, 1993

OUR REPORT NO.:

093-24032-5

**REMARKS:**

**RESULTS OF GROUNDWATER MONITORING ( ug/l = ppb ) :**

MONITORING WELL #	1	2	3	4
Benzene	BDL*	BDL	BDL	3
Toluene	BDL	BDL	BDL	18
Ethylbenzene	BDL	BDL	BDL	9
Xylenes	BDL	BDL	BDL	22
Total VOA's	BDL	BDL	BDL	52
MTBE	BDL	BDL	BDL	3

\*BDL - Below Detectable Limits

**VERMONT GROUNDWATER PROTECTION RULE AND STRATEGY**  
**PRIMARY GROUNDWATER QUALITY STANDARDS (ug/l = ppb):**

	ENFORCEMENT STANDARD	PREVENTIVE ACTION LIMIT
Benzene	5.0	0.5
Toluene	2420.0	1210.0
Ethylbenzene	680.0	340.0
Xylenes	400.0	200.0
Total VOA's	no standard listing	no standard listing
MTBE	no standard listing	no standard listing

**EPA NATIONAL DRINKING WATER REGULATIONS MAXIMUM**  
**CONTAMINANT LEVELS (MCL) STANDARDS (ug/l = ppb):**

	MCL
Benzene	5.0
Toluene	1000.0
Ethylbenzene	700.0
Xylenes	1000.0
Total VOA's	no standard listing
MTBE	no standard listing



**Professional Service Industries, Inc.**  
Willis Engineering Division

TESTED FOR:

Vermont National Bank  
Woodstock, Vermont

PROJECT:

Former Cabot Building  
VT Route 4  
Woodstock, Vermont

DATE:

May 18, 1993

OUR REPORT NO.:

093-24032-5

REMARKS:

RESULTS OF SOIL ANALYSIS (mg/l = ppm):

SAMPLE #	B2A	5A	7A	MW4
TPH	21	_____	_____	_____
GASOLINE	_____	BDL*	BDL	BDL
DIESEL	_____	58	25,250	40
BENZENE	_____	_____	_____	BDL
TOLUENE	_____	_____	_____	0.96
ETHYLBENZENE	_____	_____	_____	BDL
XYLENES	_____	_____	_____	4.34
TOTAL VOA'S	_____	_____	_____	5.30
MTBE	_____	_____	_____	BDL

\* BDL - Below Detectable Limits

Note:

1. Soil sample B2A analyzed for TPH as #2 fuel oil by EPA Method 8100 (Mod.).
2. Soil samples 5A and 7A analyzed for TPH as #2 fuel oil by EPA Method 8015 (Mod.).
3. Soil sample MW4 analyzed by EPA 8020 for BTEX compounds, and EPA Method 8015 for TPH as gasoline and #2 fuel oil.
4. See Sampling Location plan for relative sample locations.



**Professional Service Industries, Inc.**  
Willis Engineering Division

TESTED FOR:

Vermont National Bank  
Woodstock, Vermont

PROJECT:

Former Cabot Building  
VT Route 4  
Woodstock, Vermont

DATE:

April 16, 1993

OUR REPORT NO.:

093-24 032-05

**REMARKS:**

Results Of Field Screening:

Reading in parts per million (ppm) of volatile organic (voc) vapors obtained from soil samples by the use of a photonization detector (HNU Systems, Inc. Model # PI 101). Soil samples were obtained from the bore holes for the monitoring wells.

<u>MONITORING WELL BORING</u>	<u>SAMPLE DEPTH</u>	<u>RESULT</u>
MW1	8.0' Below Surface	0 PPM
MW1	3.0' Below Surface	0 PPM
MW1	14.0' Below Surface	0 PPM
MW2	2.0' Below Surface	0 PPM
MW2	5.0' Below Surface	0 PPM
MW3	2.0' Below Surface	0 PPM
MW3	4.5' Below Surface	0 PPM
MW3	7.5' Below Surface	0 PPM
MW3	9.0' Below Surface	0 PPM
MW4	4.0' Below Surface	19 PPM
MW4	8.0' Below Surface	39 PPM

POTENTIALLY SENSITIVE RECEPTORS

Inlet & Outlet West Culvert	0 PPM
Inlet & Outlet East Culvert	0 PPM
Area Underdrain Into East Culvert (Not Flowing)	0 PPM
Sewer Manhole	0 PPM
Foundation Drain Cleanout	0 PPM
Surface water (no noticeable sheen)	0 PPM



**Professional Service Industries, Inc.**  
Willis Engineering Division

TESTED FOR: Vermont National Bank  
Woodstock, Vermont

PROJECT: Former Cabot Building  
VT Route 4  
Woodstock, Vermont

DATE: April 16, 1993

OUR REPORT NO.: 093-24032-5

**REMARKS:**

Results Of Screening Building Interior:

Reading in parts per million (ppm) of volatile organic compound (voc) vapors inside the building by the use of a photonization detector (HNU Systems, Inc. Model # PI 101).

LOCATION DESCRIPTION

RESULT

GARAGE  
First & Second Floors

0 PPM

GARAGE FLOOR DRAIN

0 PPM

EAST SHOWROOM

0 PPM

MIDDLE SHOWROOM

0 PPM

MAIN FLOOR BATHROOMS

0 PPM

BOILER ROOM

0 PPM

WEST SHOWROOM

0 PPM

WEST SHOWROOM FLOOR DRAIN  
North Wall

0 PPM

APARTMENT  
Second Floor

0 PPM



**Professional Service Industries, Inc.**  
Willis Engineering Division

TESTED FOR: Vermont National Bank  
Woodstock, Vermont

PROJECT: Former Cabot Building  
VT Route 4  
Woodstock, Vermont

DATE: April 16, 1993

OUR REPORT NO.: 093-24032-5

**REMARKS:**

**Field Calibration Report**

The HNU Systems, Inc. model #PI 101 photoionization detector (PID) is equipped with a 10.2 eV bulb. Prior to use, the unit was field calibrated using the HNU Systems, Inc. span gas model #101-350 100 ppm ISO-C4H8/AIR kit.

Ambient Air Temperature - 50 to 60 degrees Fahrenheit

**Calibration Results -**

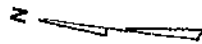
AM: 60 ppm reading at 7.42 on span setting dial

PM: 60 ppm reading at 7.16 on span setting dial

Ambient Air Background - 0 ppm reading

**Note:** Field screening of soil samples and potential receptors was performed in the morning only. Screening of the building interior was performed in the afternoon.

Professional Service Industries, Inc.



SCALE 1" = 20'

LOCATION OF 500 GAL. HEATING  
OIL TANK REMOVED JAN. 26, 1993

R<sup>±</sup>

R<sup>±</sup>

MW1

7A  
5A

MW2

PORCH

EXISTING BUILDING

GARAGE

R<sup>±</sup>

MH

B2A

MW3

MW4

PROJECT NAME

CABOT BUILDING  
SITE MONITORING  
WOODSTOCK, VERMONT

PROJECT NO.

093-24032

DRW. NO.

B

DATE

MAY 18, 1993

SAMPLING LOCATION PLAN

SOIL AND GROUNDWATER  
SAMPLING LOCATIONS



# Professional Service Industries, Inc.

## ANALYTICAL REPORT

TESTED FOR: PSI, Inc. PSI REPORT #06-385-33095-0002-O  
P. O. Box 106  
Taftsville, Vermont 05073  
ATTN: Mike Willis DATE: April 26, 1993

PROJECT: Cabot Building, 093-24032  
DATE RECEIVED: April 17, 1993  
SAMPLE MATRIX: Soil, Grab  
METHODOLOGY EMPLOYED: SW846 8020 and SW846 8015

<u>PSI LAB #</u>	<u>CLIENT SAMPLE ID</u>
04094-01	MW-4, 1055, 04/16/93

Results Begin on Page Two

  
Anthony R. Febbraro, Department Manager

4-26-93  
DATE

Respectfully Submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

FDHRS 84218

SW846 8020 PURGEABLE AROMATICS

Sample ID MW-4  
PSI Lab # 04094-01

COMPOUND NAME	RESULTS ppm (mg/kg)	STANDARD DETECTION LIMITS ppm (mg/kg)
Benzene	BDL	0.33
Toluene	0.96	0.33
Ethylbenzene	BDL	0.33
Xylenes	4.34	0.33
Total VOA'S	5.30	0.33
MTBE	BDL	0.33

Dilution Factor x1

BDL - Below Detection Limits

Received: 04/17/93  
Analyzed: 04/20/93/TB

Sample ID	Analytical Blank	NA Matrix Spike
PSI Lab #	0420	

COMPOUND NAME	RESULTS ppm (mg/l)	% RECOVERY	STANDARD DETECTION LIMITS ppm (mg/l)
Benzene	BDL	103	1.0
Toluene	BDL	96	1.0
Ethylbenzene	BDL	100	1.0
Xylenes	BDL	99	1.0
Total VOA'S	BDL		1.0
MTBE	BDL	123	1.0

Dilution Factor x1

BDL - Below Detection Limits

Received:	NA	NA
Analyzed:	04/20/93/TB	04/20/93/TB

MODIFIED SW846 8015

Sample ID MW-4  
PSI Lab # 04094-01

COMPOUND NAME	RESULTS ppm (mg/kg)	Rpt. Limits ppm (mg/kg)
Gasoline	BDL	10
No. 2 Diesel	40	10

Received: 04/17/93  
Extracted: 04/21/93/SM  
Analyzed: 04/22/93/SP

The spectrum shows the presence of diesel ( $C_{18}$  -  $C_{28}$ ), Bunker C and related products (extending beyond  $C_{28}$ ) of which only diesel is quantified. The sample required a dilution of 5.

Sample ID	Analytical Blank	NA Spike
PSI Lab #	0421	Recovery

COMPOUND NAME	RESULTS ppm (mg/kg)	% RECOVERY	Rpt. Limits ppm (mg/kg)
Gasoline	BDL		10
No. 2 Diesel	BDL	75	10

	NA	NA
Received:		
Extracted:	04/21/93/SM	04/21/93/SM
Analyzed	04/22/93/SP	04/22/93/SP



# Professional Service Industries, Inc.

## ANALYTICAL REPORT

TESTED FOR: PSI, Inc.  
P. O. Box 106  
Taftsville, Vermont 05073

PSI REPORT #06-385-33095-0003-O

ATTN: Mike Willis

DATE: April 28, 1993

PROJECT: Cabot Building, 093-24032  
DATE RECEIVED: April 23, 1993  
SAMPLE MATRIX: Water, Grab  
METHODOLOGY EMPLOYED: EPA 602

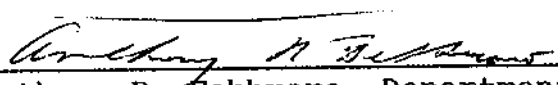
### PSI LAB #

### CLIENT SAMPLE ID

04137-01  
04137-02  
04137-03  
04137-04

MW 1, 1455, 04/22/93  
MW 2, 1505, 04/22/93  
MW 3, 1520, 04/22/93  
MW 4, 1530, 04/22/93

Results Begin on Page Two

  
Anthony R. Febbraro, Department Manager

4-28-93  
DATE

Respectfully Submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

FDHRS 84218

EPA 602 PURGEABLE AROMATICS

Sample ID	MW 1	MW 2
PSI Lab #	04137-01	04137-02

COMPOUND NAME	RESULTS ppb (ug/l)	STANDARD DETECTION LIMITS ppb (ug/l)
Benzene	BDL	1
Toluene	BDL	1
Ethylbenzene	BDL	1
Xylenes	BDL	1
Total VOA'S	BDL	1
MTBE	BDL	1

Dilution Factor	x1	x1
-----------------	----	----

BDL - Below Detection Limits

Received:	04/23/93	04/23/93
Analyzed:	04/23/93/TB	04/23/93/TB

Sample ID	MW 3	MW 4
PSI Lab #	04137-03	04137-04

COMPOUND NAME	RESULTS ppb (ug/l)	STANDARD DETECTION LIMITS ppb (ug/l)
Benzene	BDL	3
Toluene	BDL	18
Ethylbenzene	BDL	9
Xylenes	BDL	22
Total VOA'S	BDL	52
MTBE	BDL	3

Dilution Factor	x1	x1
-----------------	----	----

BDL - Below Detection Limits

Received:	04/23/93	04/23/93
Analyzed:	04/23/93/TB	04/23/93/TB

EPA 602 PURGEABLE AROMATICS

Sample ID	Analytical	Matrix
	Blank	Spike
PSI Lab #	0423	0423

COMPOUND NAME	RESULTS ppb (ug/l)	% RECOVERY	STANDARD DETECTION LIMITS ppb (ug/l)
Benzene	BDL	91	1
Toluene	BDL	102	1
Ethylbenzene	BDL	101	1
Xylenes	BDL	101	1
Total VOA'S	BDL		1
MTBE	BDL	115	1

Dilution Factor                      x1

BDL - Below Detection Limits

Received:	NA	NA
Analyzed:	04/23/93/TB	04/23/93/TB

CABOT BUILDING  
TANK REMOVAL  
WOODSTOCK, VERMONT

U.S.G.S. LOCATION MAP AND  
POTABLE WATER SUPPLIES WITHIN  
500' OF TANK LOCATION

PROJECT NO.

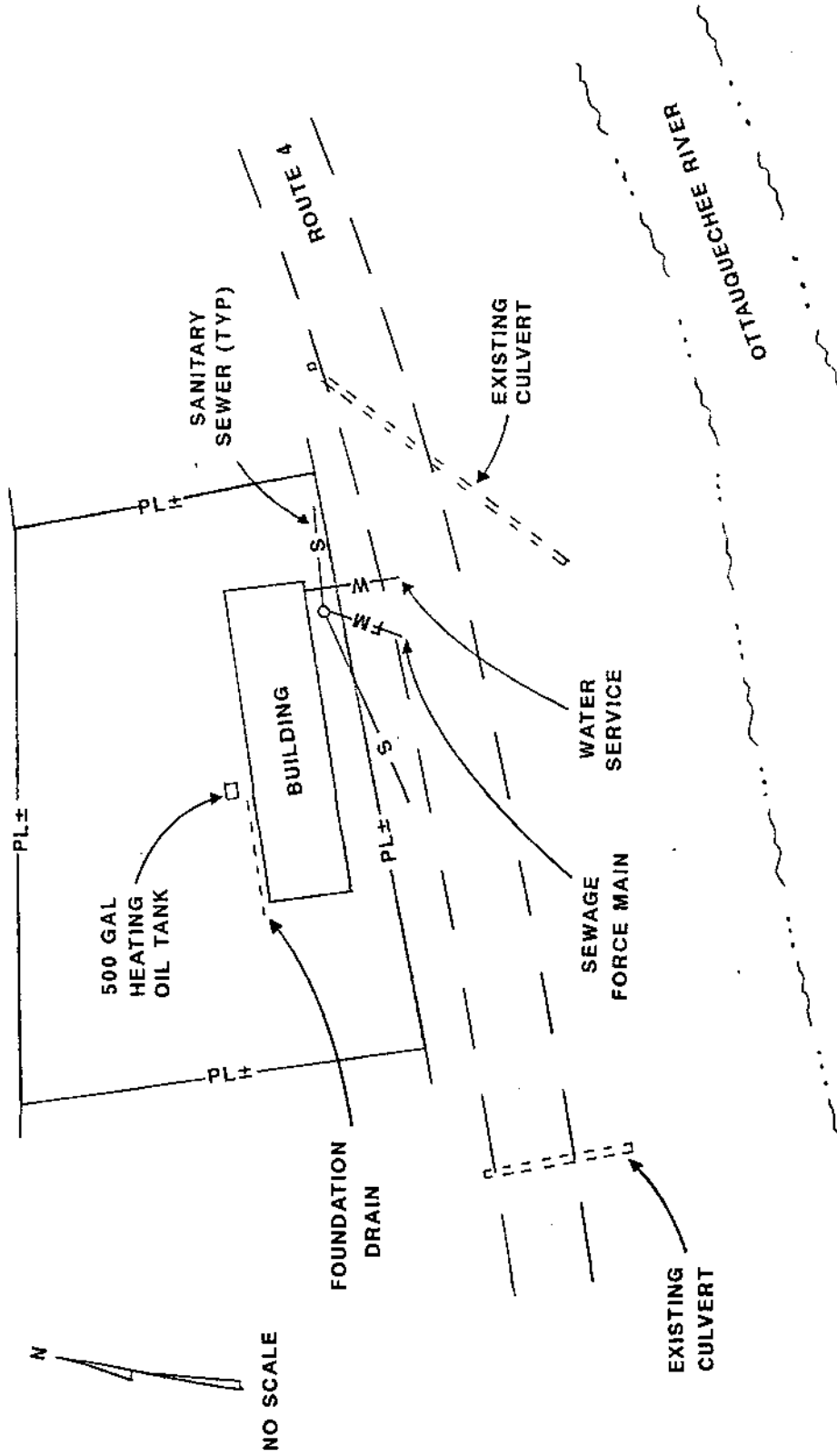
093-24032

DATE \_\_\_\_\_

FEBRUARY 3, 1993

**PROPERTY BOUNDARY SURVEY BY  
MICHAEL ENGINEERING COMPANY**

ROSE HILL ROAD



REVISÉ 3/15/93

PROJECT NO. 093-24032

DATE FEBRUARY 3, 1993

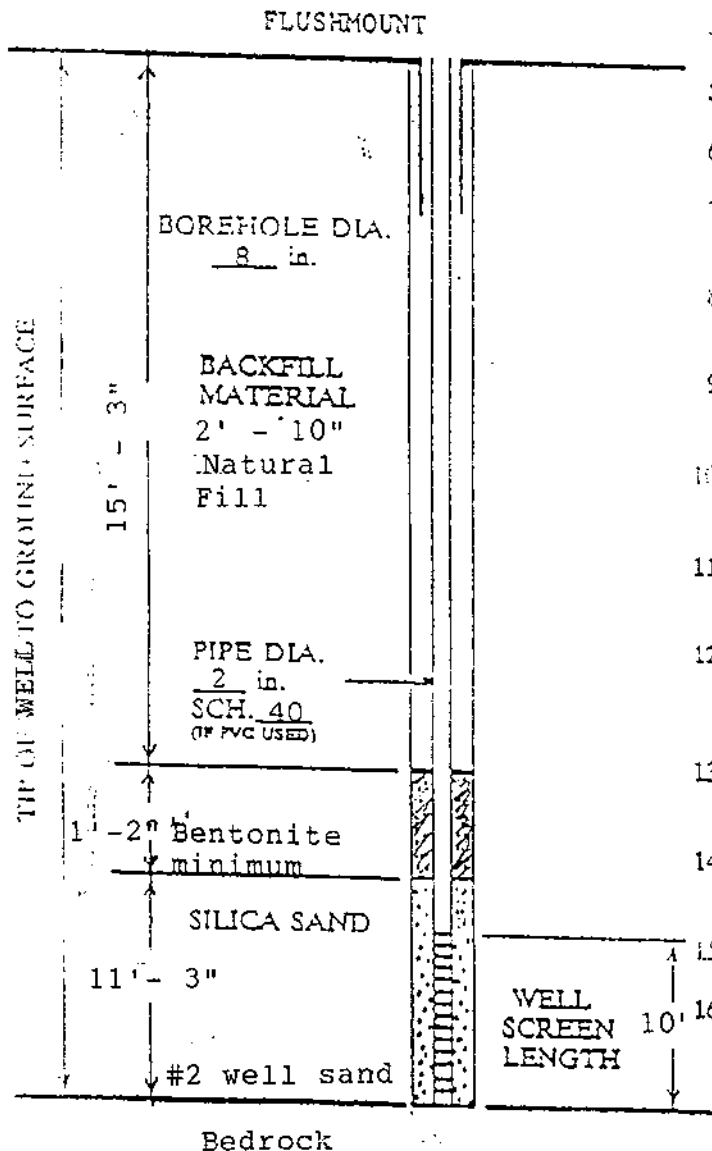
SKETCH OF POTENTIAL RECEPTORS  
DOWNSLOPE FROM TANK LOCATION

**CABOT BUILDING  
TANK REMOVAL  
WOODSTOCK, VERMONT**



Professional Service Industries, Inc.

## FIELD WELL INSTALLATION DIAGRAM



- 1) TYPE OF PIPE?  
PVC, ~~XXXVAXXZEXXSCXXNXEXX,XXXEXX~~ PVC
- 2) TYPE OF PIPE JOINTS?  
~~BELLXXCOXXPLXXS~~, THREADED, ~~OTHER~~ Threaded
- 3) TYPE OF WELL SCREEN?  
PVC, ~~GALVXXNZEXXSTAINLESS,OTHER~~ PVC
- 4) SCREEN SIZE SLOT SIZE (in.) 0.01
- 5) INSTALLED PROTECTOR PIPE W/LOCK? YES ~~XXXXX~~
- 6) WAS SOLVENT USED? ~~XXEXXEXX~~ NO
- 7) WAS DRILLING MUD USED? ~~XXEXXEXX~~ NO  
~~XXXXXXRXTXOXXEXXOTHER~~
- 8) DRILLING METHOD?  
~~XXXXXXEXX~~, HOLLOW STEM AUGER, ~~XXXXXXEXX~~
- 9) DID CASING COME UP WHEN AUGERS WERE PULLED?  
YES, NO, ~~XXX~~
- 10) WAS WELL DEVELOPED? YES ~~XXXXX~~ on 4/19/93  
BAILING, ~~XXXXXXEXX~~ ~~XXXXXXEXX~~ ~~XXXXXXEXX~~
- 11) TIME SPENT FOR WELL DEVELOPMENT?  
5 min., 15 min., 30 min., OTHER 35 minutes
- 12) APPROXIMATE WATER VOLUME REMOVED  
~~XXXXXXEXX~~ DURING DEVELOPMENT?  
5 gal., 10 gal., 15 gal., OTHER 9 Gal
- 13) WATER CLARITY BEFORE DEVELOPMENT?  
~~XXXXX~~, TURBID, ~~XXXXX~~
- 14) WATER CLARITY AFTER DEVELOPMENT?  
~~XXXXX~~, TURBID, ~~XXXXX~~
- 15) ODOR APPARENT IN WATER? ~~XXXXXEXX~~ NO
- 16) WATER LEVEL SUMMARY:  
1) DEPTH FROM TOP OF CASING (TOC) AFTER DEVELOPMENT? 6' - 6" Ft. ~~dry~~ DRY
- 2) OTHER MEASUREMENTS:

DATE 5/17/93 6'-6" Ft. FROM TOC

DATE \_\_\_\_\_ Ft. FROM TOC

WELL NO.: 1 WELL PERMIT NO.: 1607 DATE INSTALLED: 4/16/93

DRILLER: PSI DRILL CREW: S. Larocque & K. Kretsinger

JOB/CLIENT: Former Cabot Building, VT. Nat'l. Bank PSI JOB NO.: 093-24032



1) TYPE OF PIPE? PVC. GALVANIZED STEEL, OTHER PVC

2) TYPE OF PIPE JOINTS? THREADED, OTHER Threated

3) TYPE OF WELL SCREEN? PVC. GALVANIZED STEEL, OTHER PVC

4. SCREEN SIZE SLOT SIZE (in.) 0.01

5) INSTALLED PROTECTOR PIPE W/LOCK? YES NO

6) WAS SOLVENT USED? YES NO

7) WAS DRILLING MUD USED? YES NO  
OTHER

8) DRILLING METHOD?  
HOLLOW STEM AUGER, OTHER

9) DID CASING COME UP WHEN AUGERS WERE PULLED?  
YES, NO, XXX

10) WAS WELL DEVELOPED? YES NO on 4/19/9  
BAILING, OTHER

11) TIME SPENT FOR WELL DEVELOPMENT?  
5 min., 15 min., 30 min., OTHER 1 Hour

12) APPROXIMATE WATER VOLUME REMOVED  
GALLONS DURING DEVELOPMENT?  
5 gal., 10 gal., 15 gal., OTHER 0.2 Gals

13) WATER CLARITY BEFORE DEVELOPMENT?  
CLEAR, TURBID, OTHER

14) WATER CLARITY AFTER DEVELOPMENT?  
CLEAR, TURBID, OTHER

15) ODOR APPARENT IN WATER? YES NO

16) WATER LEVEL SUMMARY :

1) DEPTH FROM TOP OF CASING (TOC) AFTER  
DEVELOPMENT? 4'-6" Ft. OTHER

2) OTHER MEASUREMENTS:

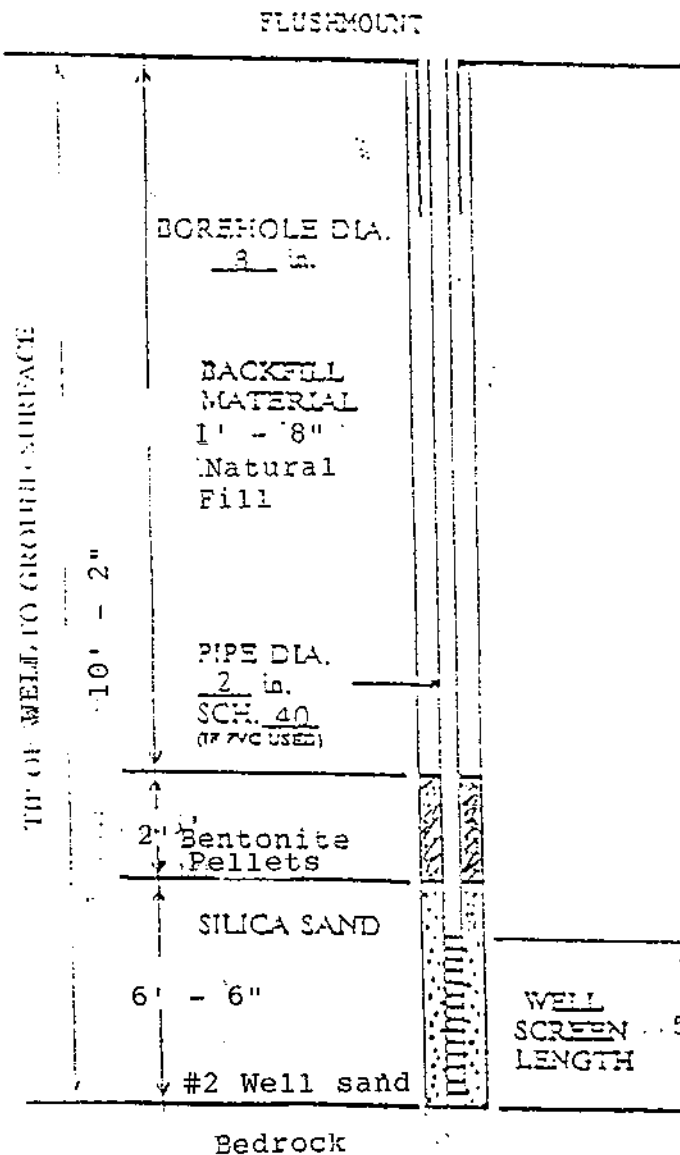
DATE 5/17/93 4'-11.5" FL FROM TOC  
DATE \_\_\_\_\_ FL FROM TOC

WELL NO.: 2 WELL PERMIT NO.: 1607 DATE INSTALLED: 4/16/93  
DRILLER: DST DRILL CREW: S. Larocque & K. Kretsinger  
JOB/CLIENT: Former Cabot Building, VT. Nat'l. Bank PSI JOB NO.: 093-24032



Professional Service Industries, Inc.

## FIELD WELL INSTALLATION DIAGRAM



- 1) TYPE OF PIPE? PVC, GALVANIZED STEEL, OTHER PVC
- 2) TYPE OF PIPE JOINTS? BELL & GASKET, THREADED, OTHER Threaded
- 3) TYPE OF WELL SCREEN? PVC, GALVANIZED STEEL, OTHER PVC
- 4) SCREEN SIZE SLOT SIZE (in.) 0.01
- 5) INSTALLED PROTECTOR PIPE W/LOCK? YES XXXXX
- 6) WAS SOLVENT USED? XXXXXX NO
- 7) WAS DRILLING MUD USED? YES XXXXX NO XXXXXX
- 8) DRILLING METHOD? SCREWDRIVER, HOLLOW STEM AUGER, OTHER XXXXXX
- 9) DID CASING COME UP WHEN AUGERS WERE PULLED? YES, NO, N/A
- 10) WAS WELL DEVELOPED? YES XXXXX on 4/19/93  
BAILING, XXXXXX
- 11) TIME SPENT FOR WELL DEVELOPMENT? 5 min., 15 min., 30 min., OTHER 50 Minutes
- 12) APPROXIMATE WATER VOLUME REMOVED XXXXXX DURING DEVELOPMENT?  
5 gal., 10 gal., 15 gal., OTHER 1.4 Gals
- 13) WATER CLARITY BEFORE DEVELOPMENT? CLEAR, TURBID, OPAQUE
- 14) WATER CLARITY AFTER DEVELOPMENT? XXXXX, TURBID, OPAQUE
- 15) ODOR APPARENT IN WATER? YES XXXX NO
- 16) WATER LEVEL SUMMARY :  
1) DEPTH FROM TOP OF CASING (TOC) AFTER DEVELOPMENT? 9'-6" Ft. XXXXXX  
2) OTHER MEASUREMENTS:

DATE 5/17/93 7'-10.5" Ft. FROM TOC

DATE \_\_\_\_\_ Ft. FROM TOC

WELL NO.: 3 WELL PERMIT NO.: 1607 DATE INSTALLED: 4/16/93DRILLER: DST DRILL CREW: S. Larocque & K. KretsingerJOB/CLIENT: Former Cabot Building, VT. Nat'l. Bank PSI JOB NO.: 093-24032

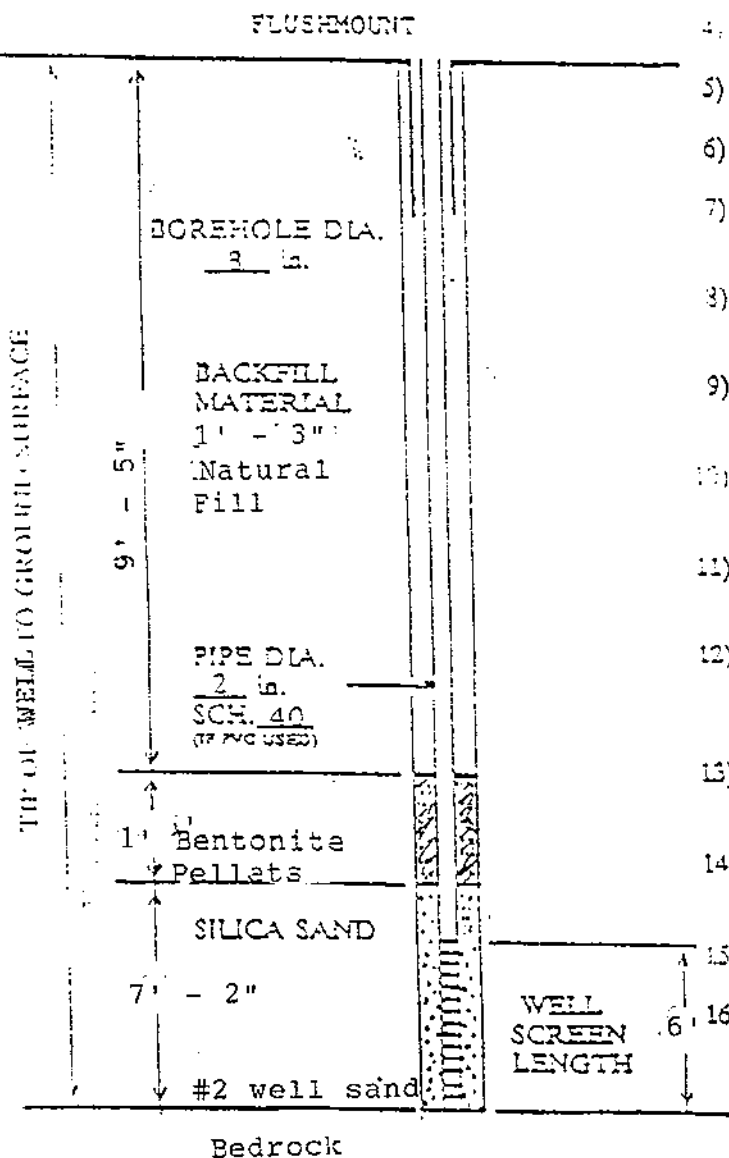


Professional Service Industries, Inc.

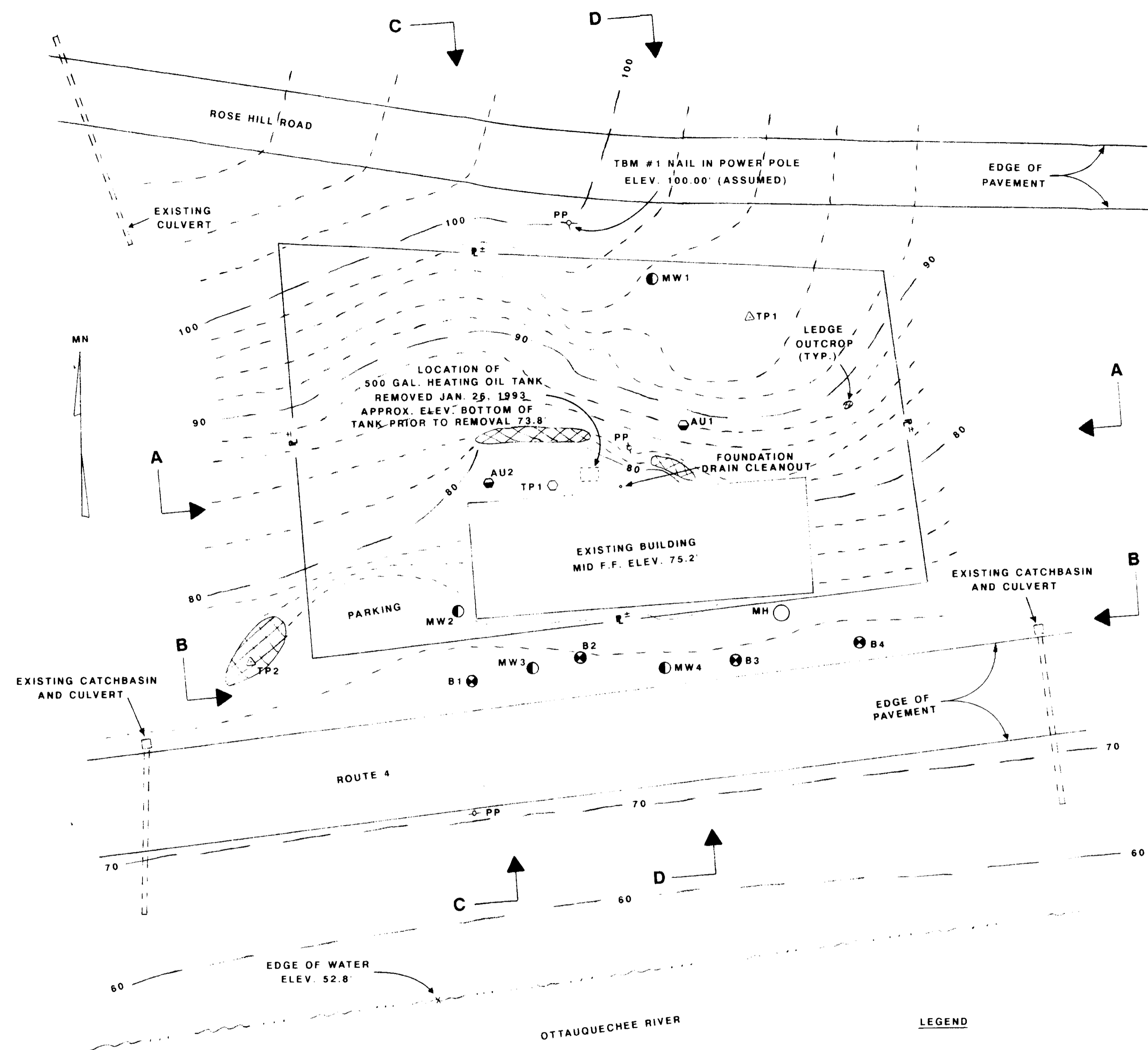
## FIELD WELL INSTALLATION DIAGRAM

- 1) TYPE OF PIPE? PVC. GALVANIZED STEEL, OTHER PVC
- 2) TYPE OF PIPE JOINTS? BEELDED, OTHER THREADED, OTHER Threaded
- 3) TYPE OF WELL SCREEN? PVC. GALVANIZED STEEL, OTHER PVC
- 4) SCREEN SIZE SLOT SIZE (in.) 0.01
- 5) INSTALLED PROTECTOR PIPE W/LOCK? YES XXXX
- 6) WAS SOLVENT USED? XXXXXX NO
- 7) WAS DRILLING MUD USED? XXXXXX NO  
XXXXXX
- 8) DRILLING METHOD? SCREWDRIVER, HOLLOW STEM AUGER, XXXXX
- 9) DID CASING COME UP WHEN AUGERS WERE PULLED? YES, NO, XXX
- 10) WAS WELL DEVELOPED? YES XXXXXX on 4/19/93  
BAILING, XXXXX
- 11) TIME SPENT FOR WELL DEVELOPMENT?  
5 min., 15 min., 30 min., OTHER 15 minutes
- 12) APPROXIMATE WATER VOLUME REMOVED  
XXXXXX DURING DEVELOPMENT?  
5 gal., 10 gal., 15 gal., OTHER 5 Gals
- 13) WATER CLARITY BEFORE DEVELOPMENT?  
CLEAR, TURBID, XXXXX
- 14) WATER CLARITY AFTER DEVELOPMENT?  
XXXXX, TURBID, XXXXX
- 15) ODOR APPARENT IN WATER? YES
- 16) WATER LEVEL SUMMARY:
  - 1) DEPTH FROM TOP OF CASING (TOC) AFTER DEVELOPMENT? 5'-5" Ft. XXXXXX
  - 2) OTHER MEASUREMENTS:

DATE 5/17/93 4'-6.5" Ft. FROM TOC  
DATE \_\_\_\_\_ Ft. FROM TOC



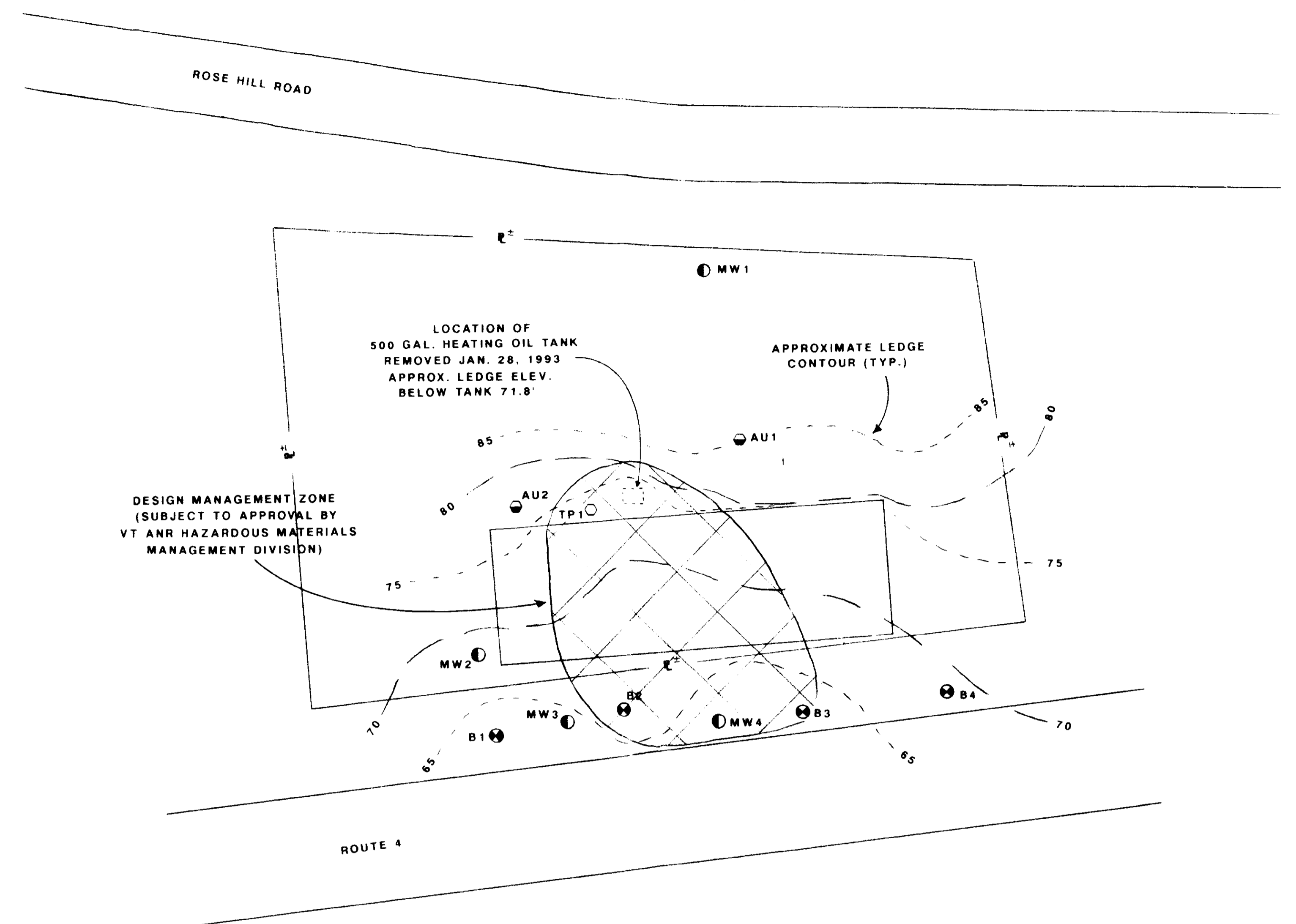
WELL NO.: 4 WELL PERMIT NO.: 1607 DATE INSTALLED: 4/16/93  
DRILLER: PSI DRILL CREW: S. Larocque & K. Kretsinger  
JOB/CLIENT: Former Cabot Building, VT. Nat'l. Bank PSI JOB NO.: 093-24032



**SITE PLAN**  
SCALE 1"=20'

**LEGEND**

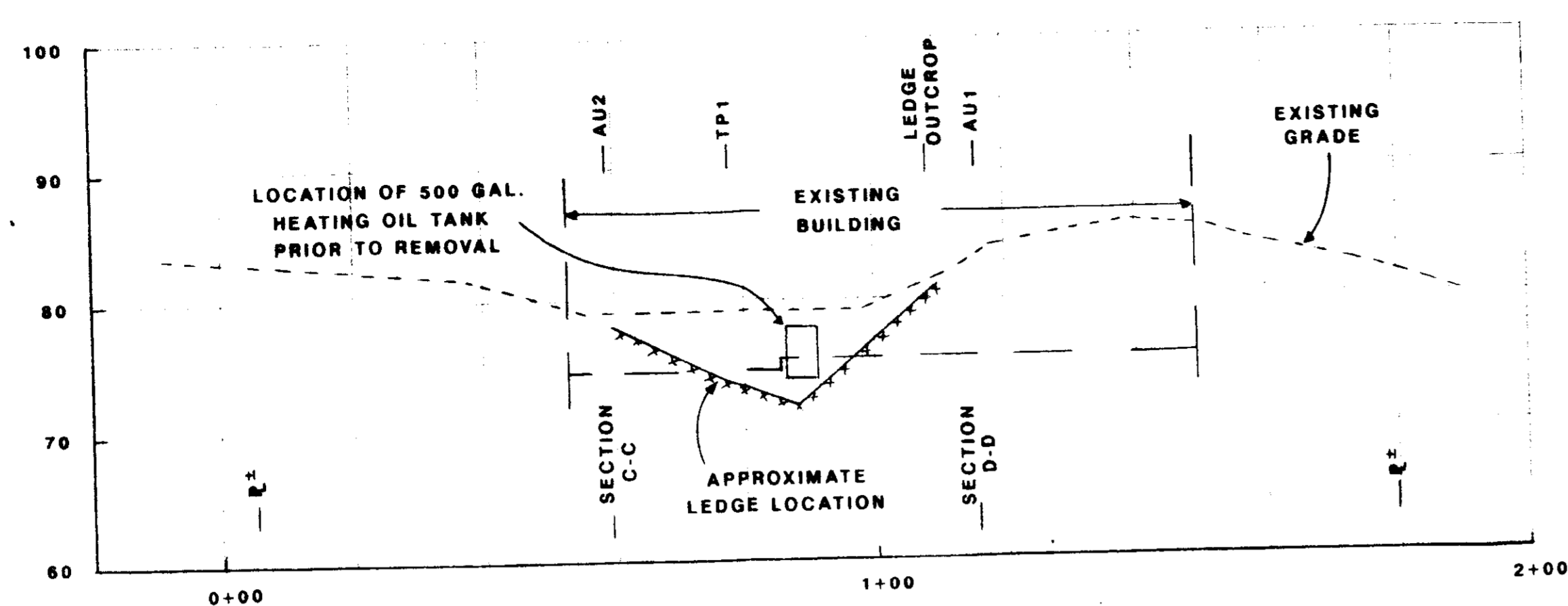
APPROX. PROPERTY LINE	---
EXISTING 2' CONTOUR	- - -
EXISTING 10' CONTOUR	- - -
POWER POLE	PP
SANITARY SEWER MANHOLE	MH
SURVEY TRAVERSE POINT	TP1
SOILS TEST PIT	TP1
SOILS BORING	B1
MONITORING WELL	MW1
LEDGE OUTCROP	LEDGE OUTCROP (TYP.)
SOILS HAND AUGER	AU1



**LEDGE CONTOUR PLAN**

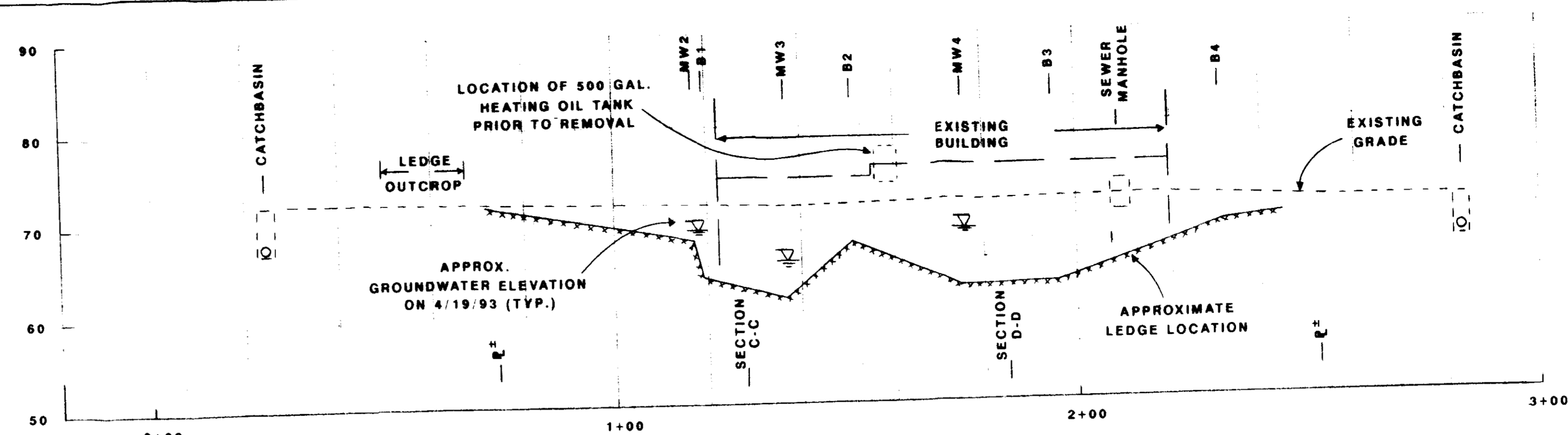
SCALE 1"=20'

<b>psi</b> Professional Service Industries, Inc. Willis Engineering Division ROUTE 4 AND ROUTE 12 TAFTSVILLE, VERMONT 05073					
PROPERTY OF VERMONT NATIONAL BANK FORMER CABOT BUILDING WOODSTOCK, VERMONT					
SITE PLAN AND LEDGE CONTOUR PLAN					
DRAWN BY:	CHK'D BY:	SCALE:	DATE:	JOB NO.:	SHEET NO.:
T.T.M.	M.J.W.	AS NOTED	5/5/93	093-24032	1 OF 2



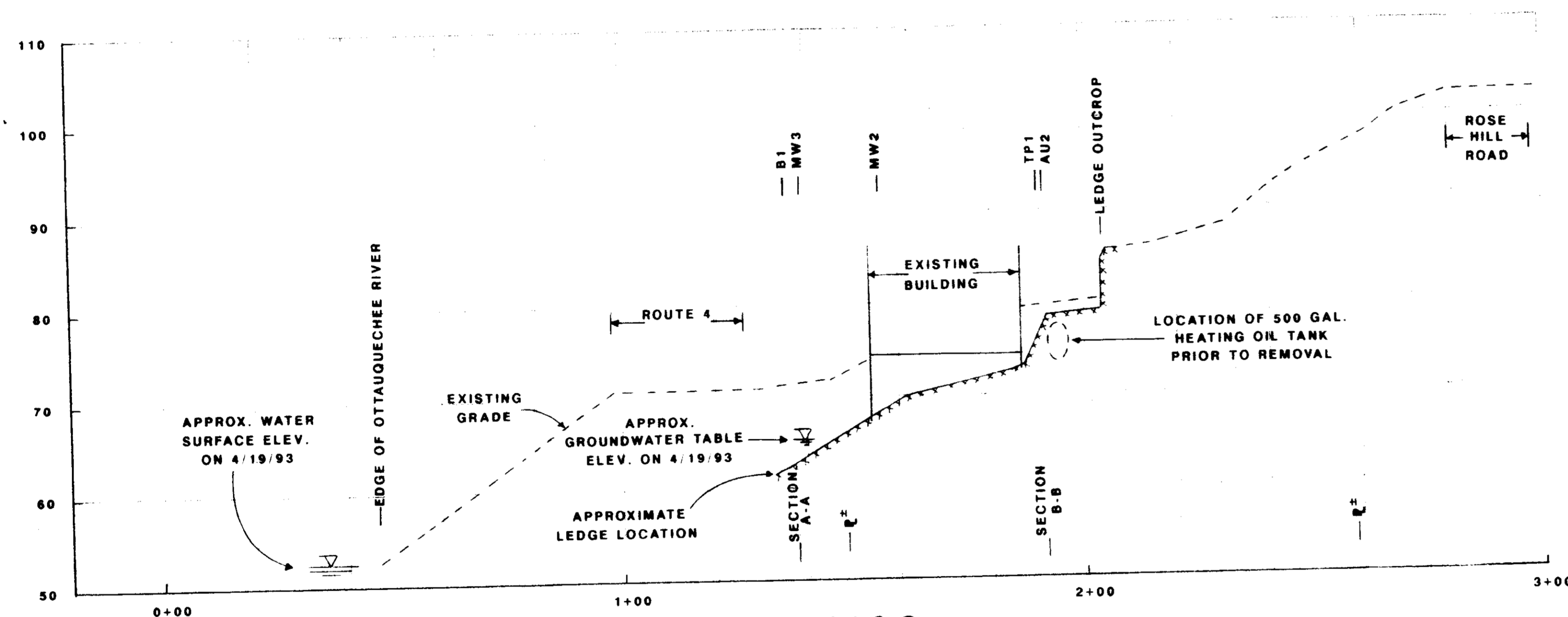
**SECTION A-A**

SCALE 1"=20' HOR. 1"=10' VERT.



**SECTION B-B**

SCALE 1"=20' HOR. 1"=10' VERT.

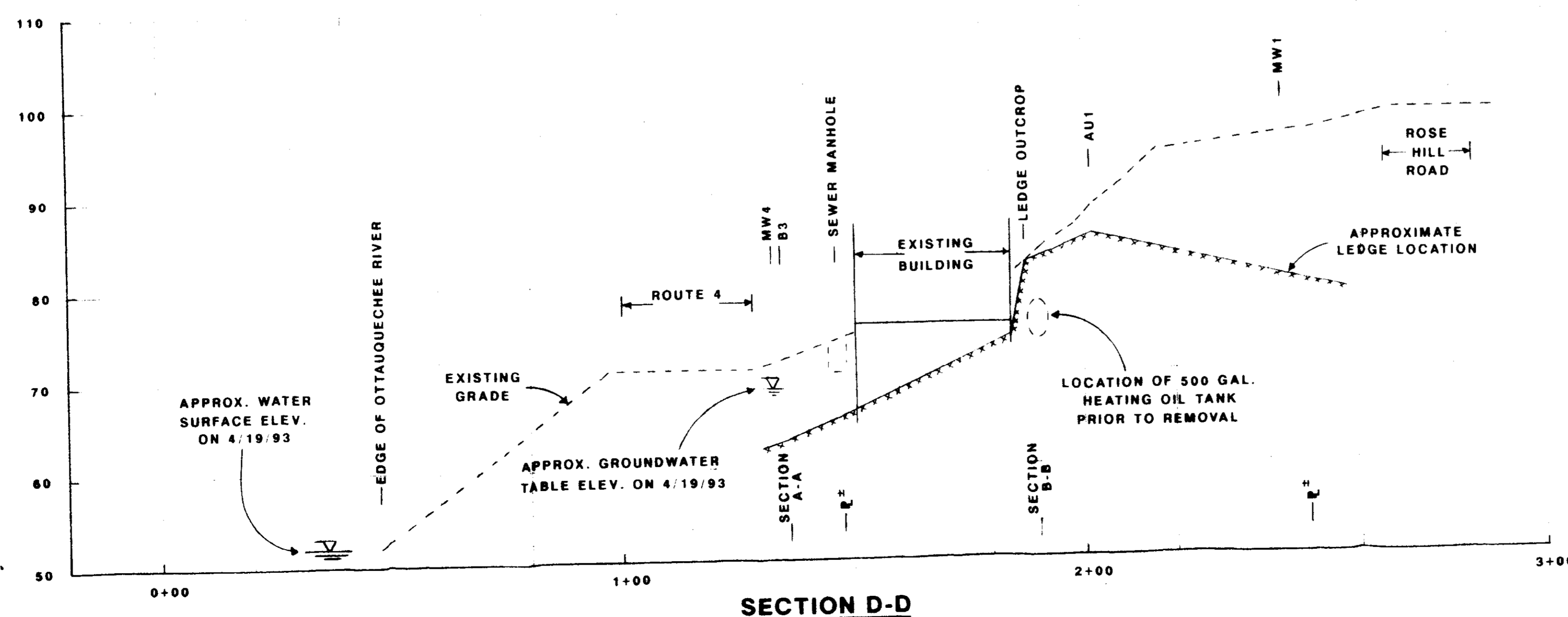


**SECTION C-C**

SCALE 1"=20' HOR. 1"=10' VERT.

<u>DEPTHS TO REFUSAL IN SOIL BORINGS, TEST PIT, AND HAND AUGER LOCATIONS</u>					
MW 1	80.8'	B 1	63.8'	TP1	73.8'
MW2	67.7'	B2	67.5'	AU1	85.0'
MW3	61.4'	B3	62.8'	AU2	78.9'
MW4	62.3'	B4	68.8'		

NOTE: LEDGE DEPTHS SHOWN IN TABLE ARE ACTUAL DEPTHS TO REFUSAL AT THAT LOCATION.  
LEDGE DEPTHS SHOWN ON SECTIONS HAVE BEEN INTERPOLATED FROM POINT DATA  
SHOWN ON SITE PLAN TO APPROXIMATE THE LEDGE PROFILES. ACTUAL DEPTHS MAY  
VARY FROM THE APPROXIMATIONS MADE BETWEEN KNOWN POINTS OF REFERENCE.



**SECTION D-D**

SCALE 1"=20' HOR. 1"=10' VERT.

		<b>PSI</b> Professional Service Industries, Inc. Willis Engineering Division ROUTE 4 AND ROUTE 12 TAFTSVILLE, VERMONT 05073			
		PROPERTY OF VERMONT NATIONAL BANK FORMER CABOT BUILDING WOODSTOCK, VERMONT			
SITE SECTIONS					
DRAWN BY: T.T.M.	CHK'D BY: M.J.W.	SCALE: AS NOTED	DATE: 5/5/93	JOB NO.: 993-24032	SHEET NO.: 2 OF 2